B2

# SEQUENCE LISTING

<110> The Scripps Research Institute
Barbas, Carlos
Stege, Justin
Guan, Xueni
Dalmia, Bipin

<120> Methods and compositions to modulate expression in plants

<130> 27801-20014.20

<140> 09/765,555
<141> 2001-01-19

<150> 09/620,897
<151> 2000-07-21

<150> US 60/177,468
<151> 2000-01-21

<160> 75

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<212> DNA
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<220>
<223> ZFPAp3

<400> 7
gatggagttg aagaagta 18

<210> 8
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<220>
<223> ZFP from -85 to -65

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<210> 9

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<223> ZFPm2 from -65 to -82

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<223> ZFPm3 from 311 to 294

<400> 12
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<210> 13
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<223> ZFPm4 from 317 to 300

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<220>
<223> Partial sequence of pMal-m2 and zinc finger
protein ZFPm2

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<211> 3300
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<213> Artificial Sequence

<220>
<223> PArtial sequence of pMal-m3 and zinc finger
protein ZFPm3

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<213> Artificial Sequence

<220>
<223> Partial sequence of pMal-m4 and zinc finger
protein ZFPm4

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<220>
<223> Parial sequence of pMal-Ap3 and zinc finger
protein ZFPAp3

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<210> 20
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<220>
<223> Oligo m34

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<220>
<223> Oligo Ap3

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<223> Oligo NRI-2

<400> 23
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<400> 24
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<220>
<223> Primer Ap3f4-R

<400> 32
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<210> 33
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<212> DNA
<213> Artificial Sequence

<220>
<223> Primer m4f3

<400> 33
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<210> 34
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR probe for AP3

<400> 34
ccatttcatc ctcaagacga cgcagct 27

<210> 35
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer for AP3 (forward)

<400> 35

tttggacgag cttgacattc ag 22

<210> 36
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer for AP3 (reverse)

<400> 36
cgcgaacgag tttgaaagtg 20

<210> 37
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 37
ctcctctaat acgactcact atagggacac tcacctagcc tctg 44

<210> 38
<211> 184
<212> PRT
<213> Artificial Sequence

<220>
<223> ZFPm1

<400> 38

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            20                  25                  30
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
        35                  40                  45
Phe Ser Gln Arg Ala His Leu Glu Arg His Gln Arg Thr His Thr Gly
    50                  55                  60
Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser
65                  70                  75                  80
Ser Asn Leu Val Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr
                85                  90                  95
Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Arg Ser Asp Asn Leu Val
            100                 105                 110
Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu
        115                 120                 125
Cys Gly Lys Ser Phe Ser Arg Ser Asp Asn Leu Val Arg His Gln Arg
    130                 135                 140
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
145                 150                 155                 160
Phe Ser Gln Ala Gly His Leu Ala Ser His Gln Arg Thr His Thr Gly
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Lys Lys Thr Ser Gly Gln Ala Gly
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<220>
<223> ZFPm2

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            20                  25                  30
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
        35                  40                  45
Phe Ser Gln Ser Ser Asn Leu Val Arg His Gln Arg Thr His Thr Gly
    50                  55                  60
Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Arg Ser
65                  70                  75                  80
Asp Asn Leu Val Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr
                85                  90                  95
Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Arg Ser Asp Asn Leu Val
            100                 105                 110
Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu
        115                 120                 125
Cys Gly Lys Ser Phe Ser Gln Ala Gly His Leu Ala Ser His Gln Arg
    130                 135                 140
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
145                 150                 155                 160
Phe Ser Arg Ser Asp Asn Leu Val Arg His Gln Arg Thr His Thr Gly
                165                 170                 175
Lys Lys Thr Ser Gly Gln Ala Gly
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<211> 184
<212> PRT
<213> Artificial Sequence

<220>
<223> ZFPm3

<400> 40
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            20                  25                  30
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
        35                  40                  45
Phe Ser Thr Ser Gly Ser Leu Val Arg His Gln Arg Thr His Thr Gly
    50                  55                  60
Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser
65                  70                  75                  80
Ser Ser Leu Val Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr
                85                  90                  95
Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Val

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            100                 105                 110
Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu
        115                 120                 125
Cys Gly Lys Ser Phe Ser Asp Ser Arg Asp Leu Ala Arg His Gln Arg
    130                 135                 140
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
145                 150                 155                 160
Phe Ser Gln Ser Ser His Leu Val Arg His Gln Arg Thr His Thr Gly
                165                 170                 175
Lys Lys Thr Ser Gly Gln Ala Gly
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<210> 41
<211> 184
<212> PRT
<213> Artificial Sequence

<220>
<223> ZFPm4

<400> 41

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            20                  25                  30
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
        35                  40                  45
Phe Ser Gln Ser Ser Ser Leu Val Arg His Gln Arg Thr His Thr Gly
    50                  55                  60
Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Asp Cys
65                  70                  75                  80
Arg Asp Leu Ala Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr
                85                  90                  95
Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Val
            100                 105                 110
Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu
        115                 120                 125
Cys Gly Lys Ser Phe Ser Arg Ser Asp Asn Leu Val Arg His Gln Arg
    130                 135                 140
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
145                 150                 155                 160
Phe Ser Thr Ser Gly His Leu Val Arg His Gln Arg Thr His Thr Gly
                165                 170                 175
Lys Lys Thr Ser Gly Gln Ala Gly
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<212> PRT
<213> Artificial Sequence

<220>
<223> ZFPAp3

<400> 42

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 1               5                  10                  15
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Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
        35                  40                  45
Phe Ser Gln Ser Ser Asn Leu Val Arg His Gln Arg Thr His Thr Gly
    50                  55                  60
Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser
65                  70                  75                  80
Ser Asn Leu Val Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr
                85                  90                  95
Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Thr Ser Gly Ser Leu Val
            100                 105                 110
Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu
        115                 120                 125
Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Val Arg His Gln Arg
    130                 135                 140
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
145                 150                 155                 160
Phe Ser Thr Ser Gly Asn Leu Val Arg His Gln Arg Thr His Thr Gly
                165                 170                 175
Lys Lys Thr Ser Gly Gln Ala Gly
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<210> 43
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<213> Artificial Sequence

<220>
<223> Promoter 18bp 2C7

<400> 43
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<211> 7
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<223> ZFP domain

<400> 44
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<210> 45
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<210> 46
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<220>
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<400> 46
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<210> 47
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<210> 48
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<220>
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<210> 49
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<210> 50
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<210> 51
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<400> 51
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<210> 57
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<400> 57
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<220>
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<400> 58
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<210> 59
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<210> 60
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<210> 61
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<210> 62
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<400> 62
Ser Gln Ala Gly His Leu Ala Ser
 1               5

<210> 63
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<220>
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ggtgaaaaac cgtataaatg cccagagtgc ggcaaatctt ttagccaggc cggccacctg 180
gccagccatc aacgcactca tactggcgag aagccataca aatgtccaga atgtggcaag 240
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agtggccagg ccggccagct cctcctcctc 330

<210> 64
<211> 330
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<220>
<223> ZFP2b

<400> 64
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ggtgaaaaac cgtataaatg cccagagtgc ggcaaatctt ttagccagtc cagcaacctg 180
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agtggccagg ccggccagct cctcctcctc 330

<210> 65
<211> 18
<212> DNA
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<220>
<223> Oligonucleotide

<400> 65
gagtgagagg aggaagga 18

<210> 66
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<212> DNA
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<220>
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<210> 68
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<212> DNA
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<220>
<223> Primer F1-f2

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<210> 69
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<212> DNA
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<220>
<223> Primer F2-f

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<210> 70
<211> 66
<212> DNA
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<220>
<223> Primer F2-b

<400> 70
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<210> 71
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<212> DNA
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<220>
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<210> 72
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ccggacgaga ttgtcagacc g 81

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cacacaggcg agaagccttt tgcctgtgac atttgtggga ggaagtttgc caggagtgat 240
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<211> 105
<212> PRT
<213> Artificial sequence

<220>
<223> Amino acid sequence of 3 finger protein C7

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20 25 30

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        35                  40                  45
Ser Arg Ser Asp His Leu Thr Thr His Ile Arg Thr His Thr Gly Glu
    50                  55                  60
Lys Pro Phe Ala Cys Asp Ile Cys Gly Arg Lys Phe Ala Arg Ser Asp
65                  70                  75                  80
Glu Arg Lys Arg His Thr Lys Ile His Leu Arg Gln Lys Asp Ser Arg
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Thr Ser Gly Gln Ala Gly Gln Ala Ser
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<211> 184
<212> PRT
<213> Artificial sequence

<220>
<223> Zinc finger protein ZFPm1

<400> 75

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Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
        35                  40                  45
Phe Ser Gln Arg Ala His Leu Glu Arg His Gln Arg Thr His Thr Gly
    50                  55                  60
Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser
65                  70                  75                  80
Ser Asn Leu Val Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr
                85                  90                  95
Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Arg Ser Asp Asn Leu Val
            100                 105                 110
Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu
        115                 120                 125
Cys Gly Lys Ser Phe Ser Arg Ser Asp Asn Leu Val Arg His Gln Arg
    130                 135                 140
Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser
145                 150                 155                 160
Phe Ser Gln Ala Gly His Leu Ala Ser His Gln Arg Thr His Thr Gly
                165                 170                 175
Lys Lys Thr Ser Gly Gln Ala Gly
            180
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